



Clarion-Goldfield Community School District Wind Turbine Project

A “Learning” Experience

The Clarion-Goldfield Community School District initiated a wind turbine project in 1995, spurred on by the success of Spirit Lake's school-owned wind turbines. Clarion-Goldfield's experience, however, included many more obstacles. In fact, the district worked for almost 7 years to complete the project. But the turbine did begin steady operation in January 2004 and is now generating electricity for the district.

The obstacles included difficulty in securing an interconnection and net metering agreement with the district's utility provider, which forced the district to limit the size of the proposed turbine. Because of the utility's net metering policies, the district had to find a turbine in the 50-100 KW range, which negatively affected the economics of the project.

The district had received a U.S. Department of Energy grant for the project, but the grant restrictions created another obstacle. With federal funding, the district could only purchase an American-made turbine. Unfortunately, only one company producing new turbines qualified. In the middle of the installation, the company entered bankruptcy, leaving it unable to provide assistance with construction, maintenance, or spare parts.

As of March 2004, the district has overcome the obstacles, the wind turbine is in operation, and the district is receiving benefits from the project. Most importantly, the wind turbine provides an educational benefit. Students have already used the turbine to apply scientific and mathematical principles. As data is accessed through a communication link with the turbine, more hands-on lessons will be shared in the district newsletter and on the district's web site.

Energy generated by the turbine decreased district purchase of electricity from the utility, the majority of which is generated by fossil fuels. The 88,419 kWh of wind-powered electricity generated as of February 2004 resulted in the following avoided emissions:

- ❑ 110.5 tons of carbon dioxide
- ❑ 0.3 tons of nitrous oxides
- ❑ 3.1 tons of sulfur oxide
- ❑ 0.4 tons of particulate matter

While the project's development was lengthy and difficult, the district hopes to eventually realize the power and cost-savings benefits initially envisioned. With the help of grant funds, low-interest loans, and the net metering payments, the turbine will pay for itself in seven to nine years. With an expected 25-year lifespan, the turbine will continue to generate electricity and provide a learning experience for the district for years to come.

For more information, visit the Clarion-Goldfield Community School District's web site at www.clargold.k12.ia.us.